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(54) Double-headed toothbrush

(57) A twin-headed toothbrush wherein a pair of opposed brush heads (13) preferably inclined at an angle of about 90° relative to one another, are mounted on respective elongate shanks (11) of a handle member with a gap between them. The shanks are connected together at a position (10) spaced from the brush heads and the heads can be pushed towards one another against a resilient bias to vary the pressure during brushing.

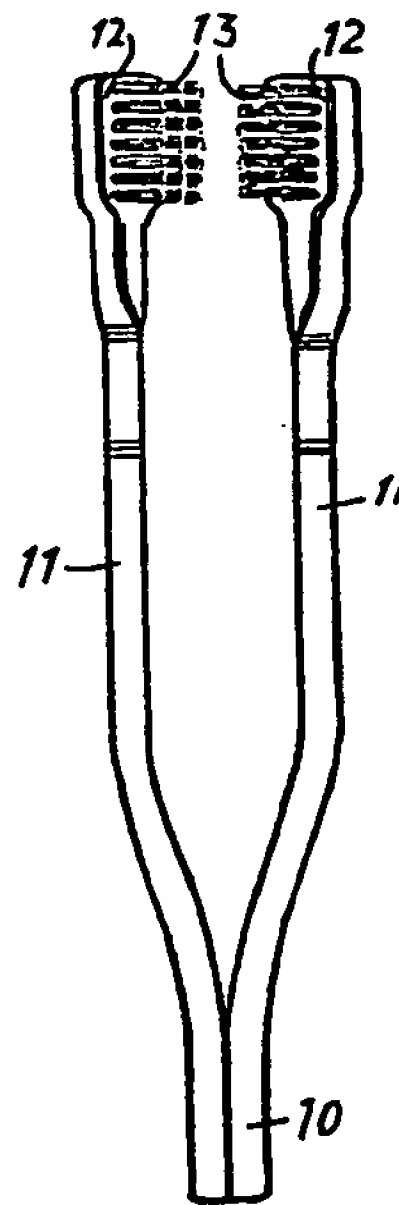


Fig. 1.

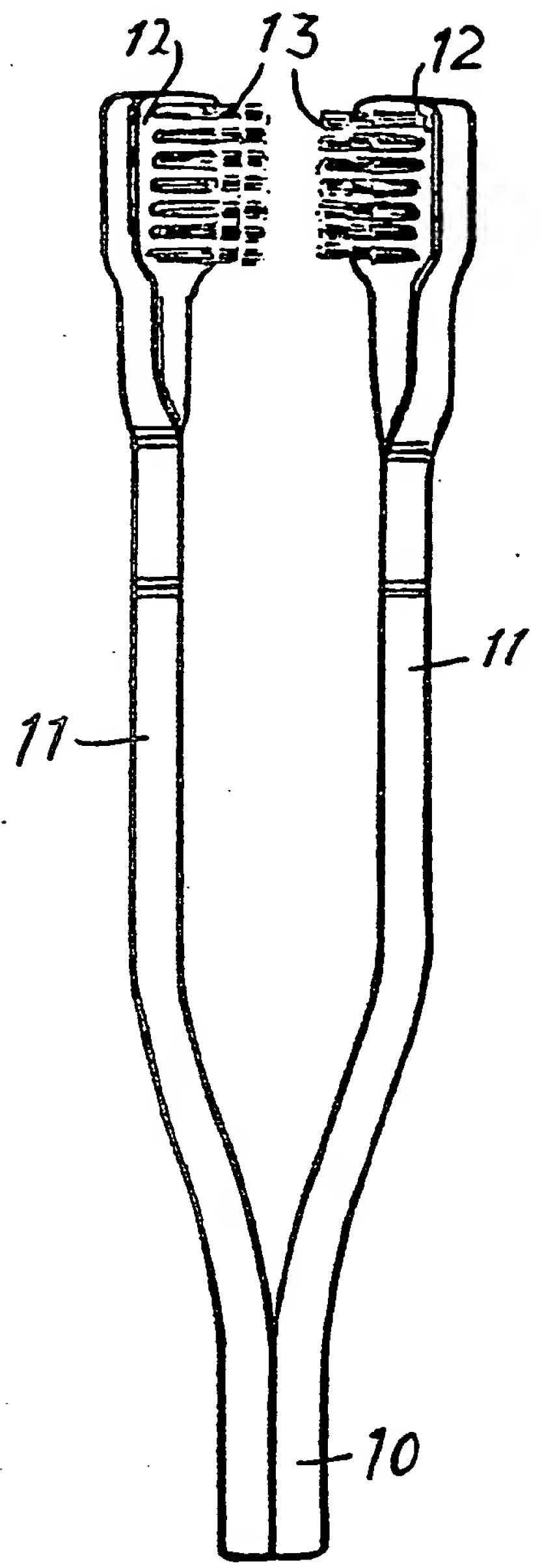


FIG. 1.

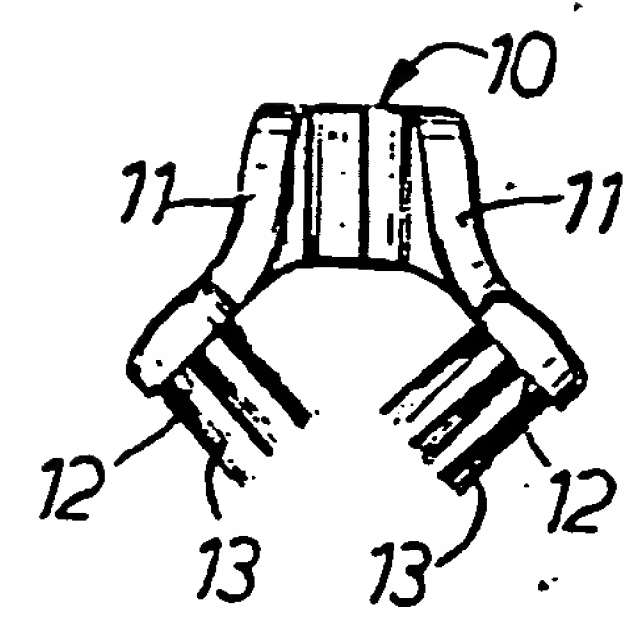


FIG. 2.

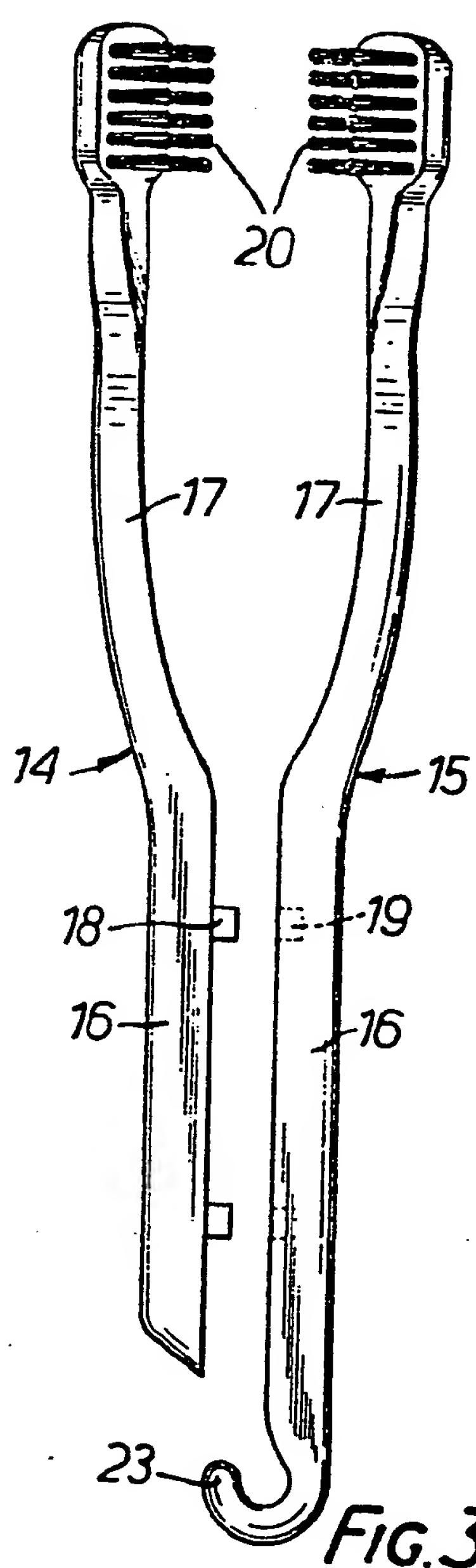


FIG. 3.

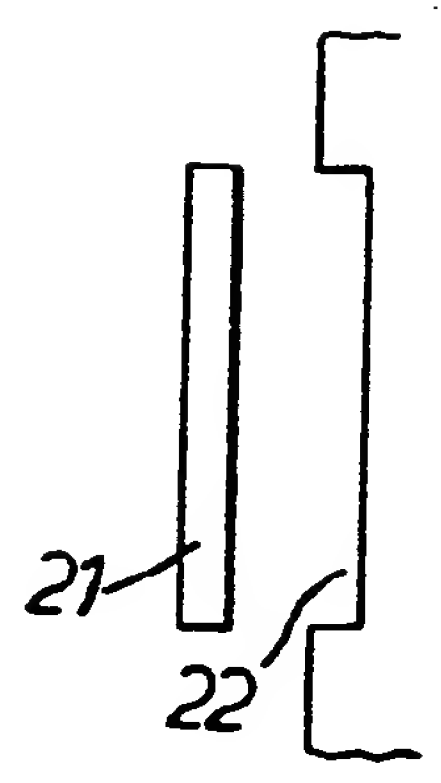


FIG. 3a.

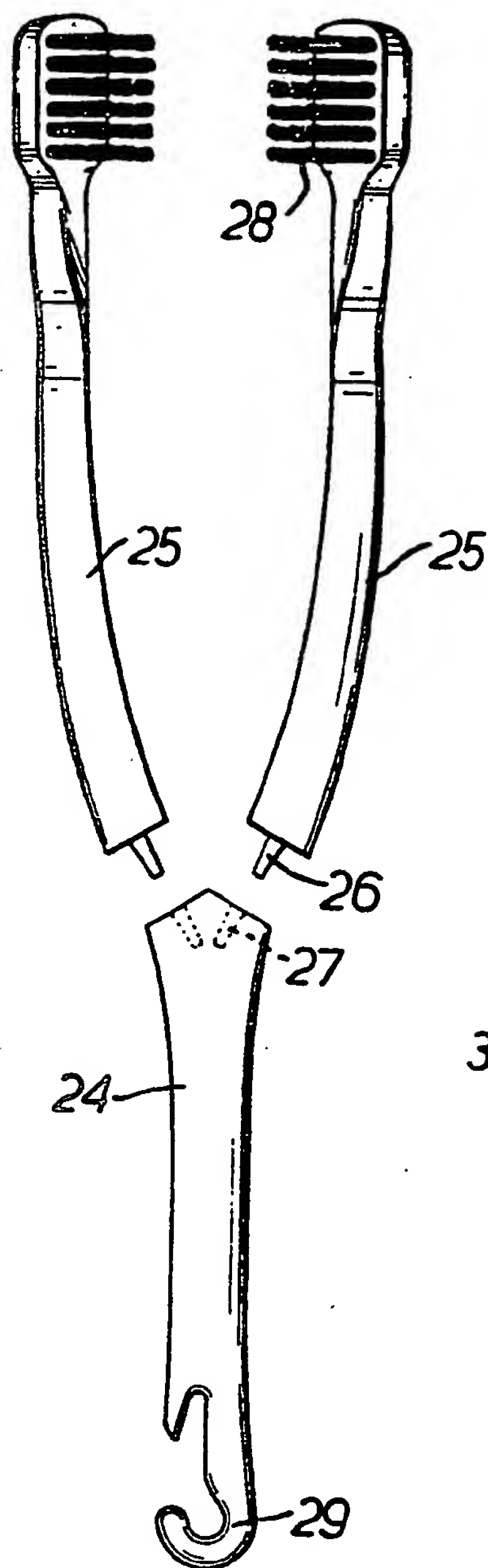


FIG. 4.

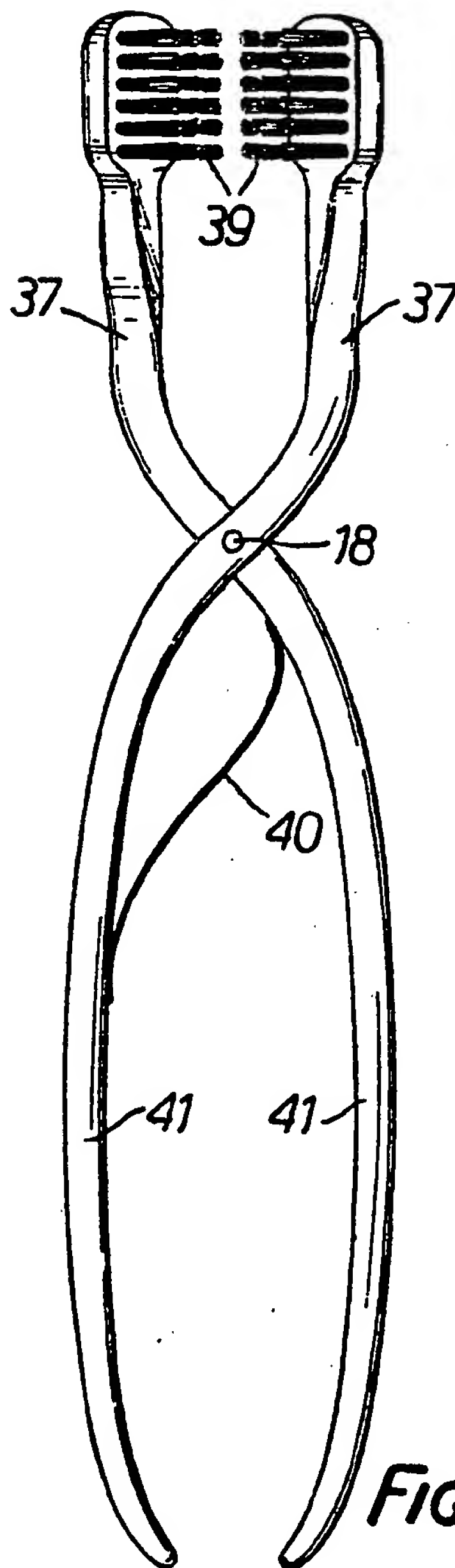


FIG. 6.

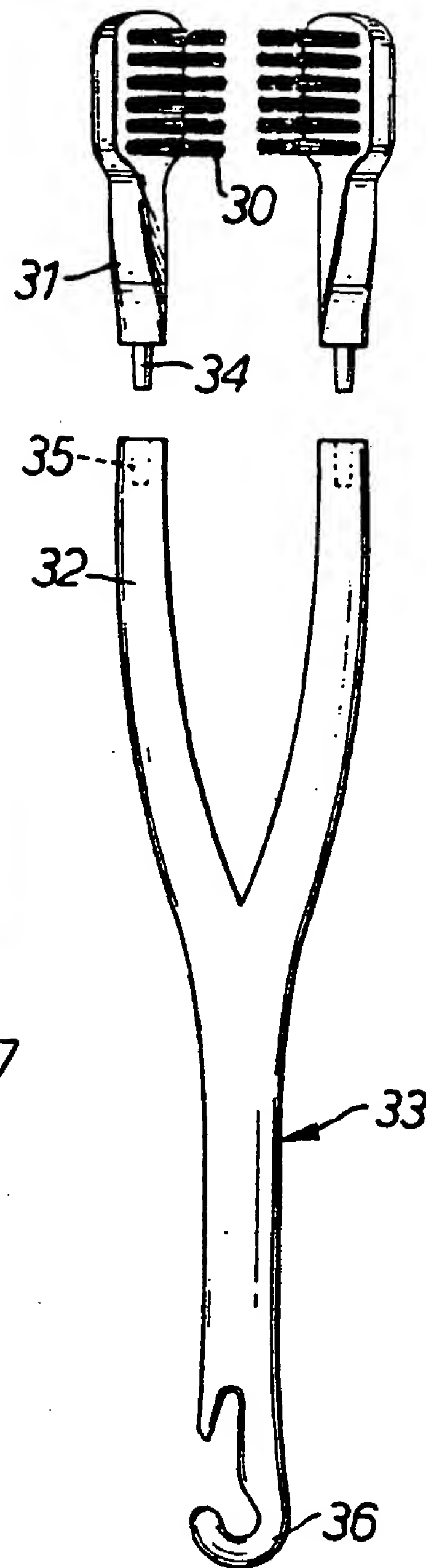


FIG. 5.

SPECIFICATION

Double-headed toothbrush

5 This invention relates to toothbrushes and in particular to a form of toothbrush designed to enable both the front and back of the teeth to be cleaned effectively in a single brushing operation.

10 Incorrect brushing of teeth, and in particular holding the brush at the wrong angle or brushing on only one side, is widely considered to be a major cause of tooth decay and gum disease.

Double headed toothbrushes are disclosed for example in GB Patent Specification 247005 wherein the bristles of two heads, which are positioned close to one another at one end of a toothbrush handle essentially comprising a single shaft, meet at an oblique angle and their ends are cut to form a pair of brushing planes with an angle of about 20° between them. GB Patents 426079 and 1552938 also disclose toothbrushes of the type wherein two mutually opposed brush heads are mounted at one end of a single shaft. In such toothbrushes, the heads tend to be pushed apart against a resilient bias during brushing, but the pressure on the teeth will depend on the size and shape of the teeth and on the part being brushed, and cannot be independently varied by the user.

It is an object of the present invention to provide a twin-headed toothbrush wherein the user can vary the brushing pressure independently of the size and shape of the teeth being brushed.

According to the invention, there is provided a toothbrush having two brushing heads mounted on respective elongate shanks of a handle member in such manner that they may be resiliently moved towards one another against a resilient bias to facilitate engagement with the front and back of the teeth respectively in a single brushing operation, the shanks being connected to one another at a position spaced from the heads and a gap being provided between the two heads in an equilibrium position of the brush whereby the heads may be pushed towards one another and towards the teeth with a variable pressure during cleaning.

The handle member may consist of a bifurcated member, the brushing heads being attached to the free ends of the arms of said member and said arms being capable of being resiliently moved towards and away from each other.

In order to facilitate the insertion of the bristles into the brushing heads, the handle member will usually be formed from two or more parts which are assembled after the bristles have been inserted in the appropriate parts.

Thus, when said handle member consists of a bifurcated member, various forms of construction are possible in order to facilitate insertion of the bristles. According to one form, the handle member is formed from two parts each comprising a lower straight part and an upper bowed part, said lower parts being connected together after the bristles have been applied to the upper ends of the bowed parts.

According to another form, the handle member is formed from a straight handle portion and two bowed arms which are connected to said straight handle portion after the bristles have been applied to the upper ends of said bowed arms. According to yet another form, the bristles are carried by short supporting members which are connected to the upper ends of the arms of the bifurcated handle member.

According to another embodiment of the invention, the handle member comprises two intersecting members that are pivoted together in the manner of scissors, the necessary resilient mounting of the brushing heads being secured by the location of a resilient strip between the lower portions of said members.

According to a preferred feature of the invention, the free end portions of the arms of the handle member are formed so as to present the bristle-supporting surfaces at an angle to each other so as to form brushing surfaces similarly disposed at an angle to each other. Said angle may conveniently be 80° to 100°, preferably approximately 90°.

The handle member may be made by injection moulding of a plastics material of suitable resilience.

Preferred embodiments of the invention will now be described with reference to the accompanying drawings wherein;

Figure 1 is a front elevation of a brush in accordance with a first embodiment of the invention;

Figure 2 is a plan view of the embodiment shown in Figure 1;

Figure 3 is an exploded front elevation of a second embodiment;

Figure 3a illustrates a modification of the embodiment shown in Figure 3;

Figure 4 is a front elevation of a third embodiment;

Figure 5 is a front elevation of a fourth embodiment; and

Figure 6 is a front elevation of a fifth embodiment.

Referring first to Figures 1 and 2, the brush comprises a pair of arms 11 joined at their ends 10, preferably by adhesive bonding, and made of a material such that the arms 11 thereof may be resiliently moved towards and away from each other.

At their upper ends, the arms 11 are twisted to present two faces 12 inclined relative to one another. The faces 12 support the bristles 13 so that the brushing surfaces are similarly inclined at an angle of about 90°.

The provision of the two resiliently mounted brushing members enables both the front and back of the teeth and gums to be brushed effectively in a single operation.

The member 10 may conveniently be made of plastics material of suitable resilience.

In order to facilitate the insertion of the bristles into the arms of the handle member, the bristles are inserted into the heads 12 before the arms 11 are bonded together.

As shown in Figure 3, a bifurcated handle member is formed from two members 14 and 15, each having a straight portion 16 and a bowed portion 17. One of the portions 16 is formed with studs 18 adapted to engage

recesses 19 in the other portion 16 to connect the members 14 and 15 together. Before such assembly, the bristles 20 are applied to the upper ends of the bowed portions 17 to form the brushing heads. As

5 shown in Figure 3a, the members 14 and 15 may alternatively be connected by the engagement of a rib 21 on one of the portions 16 with a corresponding groove 22 in the other portions. Yet again, the members 14 and 15 may be secured together by a
10 suitable adhesive. One of said portions 16 extends beyond the other end and is suitably shaped at its end to form a hook member 23. The members 14 and 15 are conveniently made of a plastics material of suitable resilience.

15 As shown in Figure 4, the bifurcated handle member is formed from a straight handle portion 24 and two bowed arms 25 which are attached to the portion 24 by the engagement of pins 26 at the lower ends of the arms 25 with sockets 27 in the upper end of the portion
20 24 after the bristles 28 have been inserted in the upper ends of the arms 25 to constitute the brushing heads. The portion 24 may be formed at its lower end as a hook 29. The handle member is conveniently made of a plastics material of suitable resilience.

25 In the embodiments shown in Figure 5, the bristles 30 are applied to short supporting members 31 which are connected to the upper ends of the arms 32 of a bifurcated handle member 33 by the engagement of pins 34 on the lower ends of said members 31 with
30 sockets 35 in the upper ends of said arms 32. The handle member may be formed at its lower end as a hook 36 and is conveniently made of plastics material of suitable resilience.

It will be understood that the pins 26 and 34 and the
35 corresponding sockets 27 and 35 may be of any desired cross-section such as round, square, diamond shaped or triangular.

As shown in Figure 6, the handle member comprises two intersecting members 37 that are pivoted
40 together at 38 in the manner of scissors, the necessary resilient mounting of the brushing heads 39 being secured by the location of a leaf spring 40 between the lower portions 41 of the members 37.

The 45° angle at which the brush heads are
45 orientated relative to the teeth in the described embodiment is considered by dentists to be the optimum angle for brushing the teeth, and in particular for cleaning the gingival pocket where the tooth surface meets the surrounding gums.

50 In use, the brush is positioned with the heads on each side of a row of teeth. By squeezing the two arms together, the desired pressure can be applied while carrying out a conventional brushing action simultaneously on both sides of the teeth. This ensures that
55 both sides are correctly brushed.

CLAIMS

1. A toothbrush comprising a handle formed with a pair of elongate shanks, one end of each of said shanks being provided with a brush head and said
60 shanks being connected together with their brush heads facing generally inwardly and being spaced from one another in an equilibrium position of the brush and movable towards one another against a resilient bias, the connection between said shanks
65 being spaced from the heads by a distance such that

by pressing said shanks together against said resilient bias said heads may be pushed towards one another and towards the teeth with a variable pressure during brushing.

70 2. A toothbrush according to claim 1, wherein the handle is formed from at least two parts which are assembled together after bristles have been inserted in respective parts to form the brush heads.

3. A toothbrush according to claim 1 or claim 2,
75 wherein the shanks are made of resilient material and are joined together at their respective ends remote from the brush heads.

4. A toothbrush according to claim 1 or claim 2, wherein the shanks are made of a resilient material and joined at their respective ends remote from the brush heads to a straight handle member.

5. A toothbrush according to claim 1 or claim 2, wherein the shanks are in the form of intersecting members pivoted together in the manner of scissors to form the handle, said resilient bias being provided by a spring urging said shanks into said equilibrium position.

6. A toothbrush according to claim 5, wherein said spring is a leaf spring between said shanks.

90 7. A toothbrush according to claim 1, wherein the handle comprises a bifurcated member formed integrally of resilient material, said shanks extending from a straight handle portion and the brush heads being attached to the shanks.

95 8. A toothbrush according to any preceding claim, wherein said brush heads have bristles extending transversely relative to one another.

9. A toothbrush according to claim 8, wherein the bristles of the two brush heads form brushing surfaces
100 disposed at an angle of 80° to 100° relative to one another.

10. A double-headed toothbrush substantially as herein described with reference to Figures 1 and 2 or any one of Figures 3 to 6 of the accompanying
105 drawings.

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